IN THE CLAIMS

Please cancel claims 2, 9, 16, 17, and 19, and amend claims 1, 3, 8, 10, 18, and 20 as follows.

1. (Currently Amended) A service gateway operable to

(i) connect at least one local client to an external network; and

(ii) hold at least one service module for providing a corresponding service, wherein the service gateway includes a control mechanism configured to respond to a request for a first service provided by a service module not present at the service gateway by sending one or more messages to an external source until a response from the external source identifies a first service module within the gateway that is capable of providing the first service;

wherein the response received from the external source identifies a proposed service and includes an input stream comprising an encoded version of the first service module, wherein the proposed service is a service required to decode the encoded version of the first service module;

wherein the service gateway further comprises a record that identifies service modules that are held by the service gateway, the record including a pointer to each of the service modules, wherein the control mechanism is operable to react to a received request that identifies a first service module by:

accessing the record to determine if the first service module is held by the service gateway;

using the associated pointer included in the record to cause the first service module to provide a corresponding service if the first service module is held by the service gateway; and

if the first service module is not held by the service gateway, recursively requesting support from an external source until the record indicates that the first service module is held by the service gateway;

wherein requesting support from an external source comprises:

sending a message to the external source until a response from the external source identifies a first service module; and

reacting to a response from the external source that includes an input stream

comprising an encoded version of the first service module and identifies a

second service module, wherein the second service module is required to

decode the encoded version of the first service module by:

if the second service module is held by the service gateway, decoding the first service

module; and

if the second service module is not held by the service gateway:

requesting support from the external source until a response from the external source

identifies a second service module that is held by the service gateway.

2.   (Cancelled)

3.   (Currently Amended) The service gateway of claim 2̶ 1, wherein the control

mechanism is operable to:

react to a response from the external source that identifies a further service

module by accessing the record to identify if the further service module

is held by the service gateway and:

using the associated pointer included in the record to cause the further

service module to provide the corresponding service if the

further service module is held by the service gateway; and

requesting support from an external source by sending a message to the

external source that includes an identification of the further

service module if the further service module is not held by the

service gateway.

4.   (Previously Presented) The service gateway of claim 1, wherein the control

mechanism is operable to compare successive responses from an external source to

identify response duplication indicative of a recursive error.

5.   (Previously Presented) The service gateway of claim 1,

wherein the control mechanism reacts to the identification of a service module and

associated data in a response from an external source by supplying the

associated data to the identified service module, if held by the service gateway,

for processing by the service module.

6.   (Previously Presented) The service gateway of claim 1, wherein an external source is a

service provider.

7.   (Previously Presented) The service gateway of claim 1, wherein an external source is a

service gateway operator.

8.   (Currently Amended) A computer program comprising program code on a ~~carrier~~

<u>storage</u> medium, operable in a service gateway computer, the service gateway

computer being operable to connect at least one local client to an external network, the

program code being operable:

to support at least one service module at the service gateway for providing a

corresponding service; and

to respond to a request for a first service provided by a service module not present at

the service gateway by sending one or more messages to an external source

until a response from the external source identifies a first service module within

the gateway that is capable of providing the first service;

wherein the response received from the external source identifies a proposed service

and includes an input stream comprising an encoded version of the first service

module, wherein the proposed service is a service required to decode the

encoded version of the first service module<u>;</u>

<u>maintain a record that identifies each service module held by the service gateway, the</u>

<u>record including an associated pointer to each of the service modules;</u>

<u>react to a received request that identifies a first service module by:</u>

<u>accessing the record to determine if the first service module is held by the</u>

<u>service gateway;</u>

using the associated pointer included in the record to cause the first service

module to provide a corresponding service if the first service module is

held by the service gateway; and

if the first service module is not held by the service gateway, recursively

requesting support from an external source until the record indicates

that the first service module is held by the service gateway;

wherein requesting support from an external source comprises: sending a

message to the external source until a response from the external source

identifies a first service module; and

reacting to a response from the external source that includes an input stream

comprising an encoded version of the first service module and

identifies a second service module wherein the second service module

is required to decode the encoded version of the first service module

by:

if the second service module is held by the service gateway, decoding

the first service module; and

if the second service module is not held by the service gateway:

requesting support from the external source until a response from the external

source identifies a second service module that is held by the service

gateway.

9.   (Cancelled)

10.   (Currently Amended) The computer program of claim [[9]] 8, wherein the program

code is operable to:

react to a response from the external source that identifies a further service module by

accessing the record to identify if the further service module is held by the

service gateway and:

using the associated pointer included in the record to cause the further service

module to provide the corresponding service if the further service

module is held by the service gateway; and

requesting support from an external source by sending a message to the

    external source that includes an identification of the further service

    module if the further service module is not held by the service gateway.

11.   (Previously Presented) The computer program of claim 8, wherein the control

mechanism is operable to compare successive responses from an external source to

identify response duplication indicative of a recursive error.

12.   (Previously Presented) The computer program of claim 8,

wherein the computer code reacts to the identification of a service module and

    associated data in a response from an external source by supplying the

    associated data to the identified service module, if held by the service gateway,

    for processing by the service module.

13.   (Previously Presented) The computer program of claim 8, wherein an external source

is a service provider.

14.   (Previously Presented) The computer program of claim 8, wherein an external source

is a service gateway operator.

15.   (Cancelled)

16.   (Cancelled)

17.   (Cancelled)

18.   (Currently Amended) A method of servicing at least one local client connected to an

external network via a service gateway, the method comprising:

holding at least one service module at the gateway for providing a corresponding

    service;

responding to a request for a first service provided by a service module not present at

the service gateway by sending one or more messages to an external source

until a response from the external source identifies a first service module within

the gateway that is capable of providing the first service;

wherein the response received from the external source identifies a proposed

service and includes an input stream comprising an encoded version of

the first service module, wherein the proposed service is a service

required to decode the encoded version of the first service module;

maintaining a record in the service gateway that identifies each service module held by

the service gateway, the record including an associated pointer to each of the

service modules;

reacting to a request that identifies a first service module by:

accessing the record to determine if the first service module is held by the

service gateway;

using the associated pointer included in the record to cause the first service

module to provide a corresponding service if the first service module is

held by the service gateway; and

if the first service module is not held by the service gateway, recursively

requesting support from an external source until the record indicates

that the first service module is held by the service gateway;

wherein requesting support from an external source comprises:

sending a message to the external source until a response from the external

source identifies a first service module; and

reacting to a response from the external source that includes an input stream

comprising an encoded version of the first service module and identifies a

second service module, wherein the second service module is required to

decode the encoded version of the first service module by:

if the second service module is held by the service gateway, decoding the first

service module; and

if the second service module is not held by the service gateway:

requesting support from ~~an~~ the external source until a response from the
external source identifies a second service module that is ~~not~~ held by
the service gateway.

19. (Cancelled)

20. (Currently Amended) The method of claim ~~19~~ 18, further comprising:

reacting to a response from an external source that identifies a further service module
by accessing the record to identify if the further service module is held by the
service gateway and:
using the associated pointer to cause the further service module to provide the
corresponding service if the further service module is held by the
service gateway; and
requesting support from an external source by sending a message to the
external source that includes an identification of the further service
module if the further service module is not held by the service gateway.

21. (Previously Presented) The method of claim 18, further comprising comparing
successive responses from an external source to identify response duplication
indicative of a recursive error.

22. (Previously Presented) The method of claim 18, further comprising reacting to the
identification of a service module and associated data in a response from an external
source by supplying the associated data to the identified service module, if held by the
service gateway, for processing by the service module.

23. (Previously Presented) The method of claim 18, further comprising requesting support
from an external service provider if a given service module is not held by the service
gateway.

24.   (Previously Presented) The method of claim 18, further comprising requesting support from an external service gateway operator if a given service module is not held by the service gateway.

25.   (Previously Presented) The service gateway of claim 1, wherein the control mechanism comprises service provisioning mechanism which includes at least:
a resolver responsive to a request from a requestor for a service to determine whether a requested service is provided by the service gateway;
a negotiator responsive to an indication from the resolver that a requested service is not provided by the service gateway to query an external source for identifying a further service for attempting to satisfy the service request; and
at least one response engine for processing information provided by the external source in response to the negotiator query;
wherein the negotiator is configured to interrogate the response received from the external source to attempt to identify a message protocol for the response, whereby the response engine selected is a response engine configured to process a message formatted in the identified protocol.

26.   (Previously Presented) The service gateway of claim 25, including a record identifying a service module for performing a service provided at the service gateway.

27.   (Previously Presented) The service gateway of claim 25, wherein the resolver is operable to respond to a request for a service by interrogating a service record to determine if the service is provided by the service gateway; and
if said service is provided by the service gateway, to identify to the requestor a service module for performing the service; and
if said service is not provided by the service gateway, to call the negotiator for querying an external source for the identity of a further service to attempt to satisfy the service request.

28.   (Previously Presented) The service gateway of claim 25, wherein the negotiator is responsive to a call from the resolver to identify and query an external source for the identity of a further service to attempt to satisfy the service request.

29.   (Previously Presented) The service gateway of claim 25,

wherein the service provisioning mechanism is operable within a support framework with each of the resolver, the negotiator and the response engine being services registered with the framework.

30.   (Previously Presented) The computer program product of claim 8, wherein the computer code is operable to provide:

a resolver service responsive to a request from a requestor for a service to determine whether a requested service is provided by the service gateway;

a negotiator service responsive to an indication from the resolver service that a requested service is not provided by the service gateway to query an external source for the identity of a further service to attempt to satisfy the service request; and

at least one response engine for processing information provided by the external source in response to the negotiator service query;

wherein the negotiator is configured to interrogate the response received from the external source to attempt to identify a message protocol for the response, whereby the response engine selected is a response engine configured to process a message formatted in the identified protocol.

31.   (Previously Presented) The computer program product of claim 31, wherein the record is a registry of services registered at the service gateway.

32.   (Previously Presented) The method of claim 18, further comprising:

a) responding to a request from a requestor for a service to determine whether a requested service is provided by the service gateway;

b) where a requested service is not provided by the service gateway, querying an external source for identifying a further service for attempting to satisfy the service request; and

c) processing information provided by the external source in response to the query; and

d) interrogating the response received from the external source to attempt to identify a message protocol for the response, whereby the response engine selected is a response engine configured to process a message formatted in the identified protocol.

33. (Previously Presented) The method of claim 32, further comprising recursively repeating steps (a), (b) and (c) until a service is found that is supported by the service gateway.

34. (Previously Presented) The method of claim 32, wherein step (a) includes interrogating a service record to determine if a service is provided by the service gateway;
if said service is provided by the service gateway, identifying to a requestor a service module for performing the service; and
if said service is not provided by the service gateway, passing to step (b).

35. (Previously Presented) The method of claim 32, wherein step (b) includes identifying and querying an external source for the identity of a further service to attempt to satisfy the service request.